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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,948

08/28/2006

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EXAMINER

DOUGHERTY, THOMAS M

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

08/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,948	Applicant(s) AUGESKY, CHRISTIAN	
	Examiner Thomas M. Dougherty	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>806, 906</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Chemisky et al. (WO 01/33061 A1). Chemisky et al. show (fig. 4) a current profile of a method for controlling an actuator, including a piezoelectric actuator, which comprises the steps of: charging or discharging the actuator in at least three stages, each of the three stages having a predefined duration of a current further defined by the steps of: during a first duration, increasing a maximum amplitude of the current from a predefined minimum to a predefined first maximum; during a second duration, keeping the maximum amplitude of the current substantially constant; and during a third duration, lowering the maximum amplitude of the current from a further predefined maximum to a further predefined minimum.

The method further comprises selecting the first maximum in accordance with an amount of charge to be fed to the actuator.

The method further comprises selecting the second duration in accordance with an amount of charge to be fed to the actuator.

As Chemisky et al. show the current profile, their method comprises reading out the first maximum and/or the second duration depending on a predefined length change

from a characteristic data field.

The maximum amplitudes (*sic*) lie on an envelope-curve that, over the first, second and third durations has substantially a shape of a trapeze.

The method further comprises providing the current to be intermittent. Note the current preceding the turn on time and proceeding the turn off time is zero amps.

The method further comprises forming the current to be made up of a series of pulses (albeit triangular shaped pulses as the Applicants themselves show), with a maximum amplitude corresponding in each case to the maximum current of the relevant pulse.

The method further comprises forming the pulses in triangular shapes, as noted.

The amplitudes of the current increase without pausing after a predefined minimum has been reached. Note that the current profile of Chemisky et al. is the same as that shown by the Applicants.

Chemisky et al. teach (fig. 4) and show (fig. 1) a device for controlling an actuator (1), including piezoelectric actuators (1), the device comprising: a final stage (1) having a control input; and a control unit providing a control voltage to operate said final stage, the control voltage rising during a first predefined period from a predefined minimum to a predefined maximum, remaining constant during a second predefined period and falling during a third predefined period from a further predefined maximum to a predefined final value.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chemisky et al. (WO 01/33061 A1) in view of Jansen et al. (US 2003/0067247 A1). Given the invention of Chemisky et al. he doesn't show a digital to analog converter providing the control voltage to his piezoelectric actuator.

Jansen et al. shows (fig. 2) a digital to analog converter (40) providing a control voltage to his piezoelectric actuator (10).

Jansen et al. further note charging a discharging the piezoelectric device however the current profile to achieve such is unknown.

It would have been obvious to one having ordinary skill in the art to use a digital-to-analog converter in the device of Chemisky et al. at the time of their invention such, *mutatis mutandis*, as is shown by Jansen et al. since it is a well-known component for voltage conversion.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Any additional prior art cited reads on some aspects of the claimed invention.

Direct inquiry to Examiner Dougherty at (571) 272-2022.

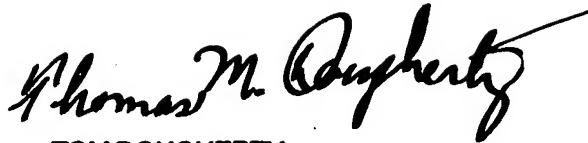
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July 25, 2007

A handwritten signature in black ink, reading "Thomas M. Dougherty". The signature is written in a cursive style with a long, sweeping horizontal line extending from the end of the name.

TOM DOUGHERTY
PRIMARY EXAMINER